Managing Natural Resources: People Land and Water (PLaW)

An IDRC Program Initiative for Africa and the Middle East

PROGRAM INITIATIVE REVISED PROSPECTUS 2000-2003

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LIST OF ACRONYMS

ACACIA	Communities and the Information Society in Africa
AHI	African Highlands Initiative
AME	Africa and the Middle East
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
BoG	Board of Governors
CAD	Canadian Dollars
CASS	Centre for Applied Social Sciences (U of Zimbabwe)
CBNRM	Community Based Natural Resource Management (PI)
CIDA	Canadian International Development Agency
CORAF	Conférence des Responsables de Recherche Agronomique en Afrique de l'Ouest et du Centre
CPF	Corporate Program Framework
DFAIT	Department of Foreign Affairs and International Trade
DFID	Department for International Development (ex British ODA)
EARO	Eastern and Southern Africa Regional Office (IDRC)
ECAPAPA	Eastern and Central Africa Program for Agricultural Policy Analysis
ECOHEALTH	Ecosystems Approaches to Human Health (PI)
FAO	Food and Agricultural Organization
FOODLINKS	Connecting small producers in the South with markets in Canada (PI)
IARCS	International Agricultural Research Centre(s)
ICED	Information and Communication Technologies
IDRC	International Development Research Centre
IFPRI	International Food Policy Research Institute
LMNR	Local Management of Natural Resources
MENA	Middle East and North Africa
MINGA	Alternative Approaches to Natural Resources Management in Latin America and the Caribbean (PI).
NGO	Non-governmental Organization
NRM	Natural Resource Management
PI	Program Initiative
PIM	Project Identification Memorandum
PITL	Program Initiative Team Leader
PLaW	People, Land and Water Program Initiative
PO	Program Officer
PRAPACE	Programme Régional d'Amélioration de la Pomme de Terre et Patate Douce en Afrique Centrale et de l'Est
RSA	Research Support Activity
SACCAR	Southern Africa Centre for Cooperation in Agricultural Research
SADC	Southern Africa Development Community
SSA	Sub Saharan Africa
UNDP	United Nations Development Program
UNEP	United Nations Environmental Program
UNICEF	United Nations International Children Educational Fund
USAID	United States Agency for International Development
WDM	Water Demand Management

EXECUTIVE SUMMARY, PLaW PROSPECTUS 2000

At the end of the phase one evaluation (1997-2000) of the Managing Natural Resources-People Land and Water (PLaW) program initiative, the IDRC management recommended that the PI extended its plans for a second phase (2000-2003) with minor adjustments in its prospectus. Adjustments were to incorporate lessons learned by the PI during its first phase and key recommendation given by the panel of external experts that assisted to review the PI in 1999. Such adjustments, as proposed to the BoG for approval are incorporated in this modified PI prospectus.

The long-term goal of PLaW is to promote the equitable, sustainable and productive utilization of land and water resources by rural women and men in threatened ecoregions of Africa and the Middle East (AME). The shorter term goal is to enhance their lives and their livelihoods through greater food and water security. The primary focus is at community and household level with attention to poor and marginalised groups. However, land and water management will also be focussed on at national and regional levels. PLaW estimates that the PI will require 15,000,000 CAD to meet its goal and objectives over the three to four years period (2000 to 2003). From this the team expects a minimum of 9,000,000 CAD from IDRC's budget. PLaW anticipates good opportunities for collaboration in funding and implementing research. Several ongoing projects are already financed in parallel with other donors, including USAID, Ford Foundation, the Rockefeller Foundation, Swiss Development Cooperation, and the European Union. The PI plans to raise 6,000,000 CAD in other non-IDRC contributions. Research partners include national agricultural research systems, NGOs, and local and national public institutions, international agricultural research centres, universities, and several existing research networks.

PLaW 's strategic research objectives are to: a) enhance understanding and knowledge to manage the systemic and external factors that lead to degradation or improvement in the productive and service capacity of land and water resources, b) contribute to local and national policies and institutional arrangements that, by managing intrinsic conflicts, equitably increase access, availability, quality and productive utilization of land and water resources, and c) develop or use communication strategies that facilitate the exchange of information and knowledge among stakeholders and foster participation in development initiatives. PLAW's people-centred approach requires the PI team: a) to look at each research problem or task from the perspective of the beneficiaries' social, economic and environmental circumstances, and b) to engage them in the research process.

During 2000-2003, PLaW will focus on water- and food security. To approach these concerns, PLaW will centre its support around two research issues, Water Demand Management and Soil Productivity. The PI will concentrate on rural areas and selected fragile ecosystems (semi-arid Lands across all of Africa and the Middle East plus arid lands in the Middle East and North Africa, highlands in East and Central Africa, and sub-humid lands in West and Southern Africa).

In its projects, PLaW will identify and assess effects on the behaviour of partners and other research strengthening and utilization outcomes through careful monitoring and through evidence from final workshops, specific studies on impacts from research, references to the PI's work, and materials submitted by recipients. PLaW will also encourage and support research teams to maintain active contact and interaction with relevant extension agents, potential investors, other decision-makers and policy-makers, to keep them aware of and interested in the research results and potential benefits.

PLAW's accountability starts with the review and approval of projects and includes internal and external assessments of the overall program initiative and team performance. The PI's performance is defined by how well it is approaching its goal and objectives. A basic indicator is the correlation between the objectives and outputs of individual projects and other activities with the overall ones of the PI. One permanent concern of the PI, especially at the end of this phase, will be the continuing validity of PLAW's view of the development problematique, its goal and objectives in response to these issues, and progress made to date. The results will form the basis for any follow-up phase of the Program Initiative.

1 STATEMENT OF PURPOSE

The "Managing Natural Resources - People, Land and Water" Program Initiative, to be referred to as PLaW in what follows, supports research aimed at improving the well-being of rural people living in stressed or fragile[1] ecosystems of Africa and the Middle East (AME). In particular, PLaW promotes improvement in the ways women and men at community level can access and use land and water resources to secure food, employment, income, and health. It champions improvements in the use of land and water that are more efficient[2], sustainable and equitable.

Widespread depletion and degradation of land and water resources constrain development opportunities for the majority of poor people living in rural areas. This is especially true in fragile or stressed ecoregions such as the populated highlands or the vast tracts of arid and semi-arid lands of AME. Rapidly growing rural populations along with urban and external markets increase demands for natural resource-based products. Accelerated urbanization, infrastructural progress and policy adjustments have usually reinforced and accelerated these trends. Communities often cannot adapt quickly enough their use of resources to the increasing requirements of their changing environments. PLaW recognizes that such adaptations depend on many factors including community organization, politics, gender equity, education, information, infrastructure culture, health, nutrition, and natural resource management (NRM) technologies and policies. The PI has internalized this understanding in its objectives, strategies and approaches for the selection and support of research areas.

The PLaW Program Initiative was initially created in October 1996. It resulted from merging three on-going program clusters with a focus on Africa and the Middle East (AME): Desertification, Dryland Water Management, and Sustainable Production Systems and Policies. The work of the PI over its first three year phase was reviewed by IDRC with the assistance of two external experts by mid 1999. Based on such review, the PI was requested to prepare a work plan for a second phase and to incorporate minor changes in its prospectus. Such changes, as proposed to the BoG in its June 2000 meeting, are incorporated in this modified prospectus to reflect lessons learned by the PI in its first phase and key recommendations from the external evaluation. In most part, however, this version of the prospectus is based on the first version and therefore on the arguments, ground work, consultations, and reviews referred to there.

1.1 The Development Problem and Opportunities

Millions of people lack sufficient and good quality food and water in AME. This is partly due to a limited per capita endowment of the basic land and water resources. There are, however, other aggravating factors. These include: skewed distribution of land resources access and ownership, presently growing population and market pressures for increased production of food and other commodities, and policies that reinforce those pressures. They are, in general, contributing to rapid erosion and loss of fertility that continuously degrade the soils and water on which food production depends.

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[1] Fragile or stressed ecosystems are those that are susceptible to significant deterioration under common agricultural use systems and management practices. Gow (1989) provides more extensive treatment of the concept.

[2] Efficiency relates to the ratio of outputs or benefits per unit of resource inputs.

UNEP's International Soil Reference and Information Centre estimated that, for Africa as a whole, by 1991, five million ha of originally productive land had been degraded to the point of "no possible economic rehabilitation", another 321 million ha presented moderate to severe productivity degradation and 174 million ha were lightly degraded (Olderman *et al.*, 1991). Estimates of relative crop yield reductions associated with soil erosion range from two to 40 percent, with a mean of 8.2 percent for the continent and 6.2 percent for SSA. If accelerated erosion continues, yield reductions may reach 16.5 percent for the continent and 14.5 percent for SSA by the year 2020 (Lal, 1995).

Similarly, the quantity and quality of fresh water supplies for growing and processing food, for household and urban uses, as well as for other social, economic and environmental uses have not kept pace with rapid population and economic growth. Additional sources of supply are becoming scarce and more expensive to develop. Widespread pollution and salinisation of surface and ground sources are reducing water supplies still further. In 1992, the World Resources Institute classified virtually all countries in North Africa and in the Sahel as "water stressed," i.e., water availability is not enough to fully satisfy present and projected demand. At least six more African countries may be added to this list by 2025. Taken together, more than half the countries in Africa have significant water-access problems (Bryant 1994). Some authors (e.g., Bryant 1994) argue that per capita water supply in Africa has declined by as much as 50 percent since 1950.

This trend of degradation in water and soil resources threatens agricultural production, its growth and its overall contribution to development. It negatively affects income, access to food and education and the health of individuals, communities and entire societies. The UNDP 1997 Human Development Report indicates that in 1993, the SSA region already had the highest proportion of poor people in the world, i.e., some 220 million or 38 percent, living on less than US$1 a day. The same report shows that most SSA countries are among the lowest ranked in the world in terms of the more comprehensive Human Poverty Index, Human Development Index and also the Gender Disparity Index.

A priority challenge therefore, is for communities to identify ways to reconcile the increasing demands for food, water services and other commodities, with the finite and often diminishing supply of land and water resources needed to produce them. The challenge is difficult but not insurmountable.

There are a number of examples from within Africa, *e.g.*, Kenya (Machakos) and Niger (Keita), and from other developing countries, where increases in agricultural production have been achieved while reducing the use of water or reversing land degradation (Templeton and Scherr, 1997). These examples of proper natural resources management by communities show that it is possible to break the usually consistent relationship between population density or poverty and land degradation and that both those factors can create incentives or disincentives for resource improvement (Scherr, Jackson and Templeton, 1995 in Scherr and Yadav, 1995). Furthermore, agricultural production in the continent is still based on outdated extensive approaches, *e.g.*, SSA shows an index of just 55 percent in cropping intensity and 1 t ha^{-1} as an average yield of cereals, while the corresponding indexes for South Asia are 110 percent and 2.3 t ha^{-1} respectively. The Food and Agricultural Organization (FAO) and the Water and Irrigation Management Institute (WIMI) claim that SSA has the greatest gap in the world between potential and actual water use for irrigation. According to FAO, 85% of the potential water remains untapped. Their studies also indicate that irrigation in SSA is three times as expensive as in Asia.

Farmers and communities recognize soil degradation and they can control it rapidly (e.g., cases cited by Templeton and Scherr, 1997) when given proper guidance and incentives. They may modify their farming systems or practices, through independent innovation or adopt practices from elsewhere. One research opportunity therefore, is to better understand the conditions under which households and communities respond rapidly and select such productive yet less degrading options.

1.2 The Conceptual Approach and IDRC's Comparative Advantage

PLaW's mission is to contribute to the quality of life of women and men living in stressed ecoregions of AME by enhancing their food security and water security, which is dependent on access to and proper use of land and water resources, through promoting and supporting local research and researchers.

Both access to land and water resources and decisions to allocate and manage (use) those resources by men and women at community level are influenced by a range of factors, including demographic forces, community organization, politics, market conditions, institutional factors, gender equity, education, information, infrastructure, culture, health, nutrition, technologies and the natural environment. This range of factors is in turn influenced by public policies, which can be crucial in accelerating the transition to land- and water-enhancing production systems that also improve the welfare of rural men and women. Enabling policy options include the provision of incentives to invest in resource conservation, the encouragement of communities to work together and manage their own resources, provision of secure rights to land and water resources, and the assignment of value to resources that reflects their real scarcity.

The manner in which people access and use land water resources is equally important as their intrinsic quantity and quality. PLaW recognizes that people are at the centre of the resource and related food security and water security problems. They must be involved in the search for solutions. Accordingly, PLaW will support research activities focussed on improving the access to and utilization of land and water by rural women and men. Researchers will look at their tasks from the perspective of the beneficiaries' social, economic and environmental circumstances. They will engage them in the research process to the extent possible. Researchers must observe how different groups of men and women are affected by different NRM problems determine how they can participate in and benefit from the proposed solutions. PLAW's research will give emphasis attention to marginalized people.

Because many researchers specialized in natural resource management (NRM) lack experience in studying the attitudes, desires, knowledge and behaviour of people, especially those of women, PLaW's approach requires capacity-building among research partners and those charged with the task of disseminating technologies and applying relevant policies. In this regard, PLaW has started to use training capacity created during previous Centre's efforts, as in the case of the Organization for Social Science Research, to train and assistance present researchers to incorporate social analysis and especially gender analysis and tools as part of their work.

In the past, governments, NGOs and donors emphasized attention to production technologies. They seldom focussed on economic measures to increase the availability, efficiency and sustainability of the use of land and water resources. Even when considering policies, they tended to focus on the resources rather than on the people. Although development was the goal, the process resulted in recommended interventions and policies that rarely considered the

needs, desires, capacities or practices of the people they hoped to assist. The differential impact of these recommendations on women and other marginalised groups was largely ignored.

Past IDRC activities have generated a wealth of potential research partners for PLaW. These include national agricultural research systems (NARs), NGOs, local and national public institutions, international agricultural research centres (IARCs), and universities in AME. IDRC is a member of the Consultative Group for International Agricultural Research (CGIAR) where it has continued playing a leading role in encouraging member IARCs to expand their research horizons to include socio-economic considerations, gender, communications and NRM concepts. One outcome is the CGIAR co-ordinated eco-regional initiatives that target land degradation within geographically and ecologically defined regions. These include the Soil, Water, and Nutrient Management Program (SWNM), the System Wide Livestock Initiative (SWLI), the Desert Margins Program, and the African Highlands Ecoregional Program (named AHI). All incorporate a bottom-up approach to understand the causes of natural resource degradation and to develop appropriate technologies and policies. They attempt to rectify these destructive processes through a concerted effort that puts people at the centre of NRM and builds on accumulated local knowledge and know-how.

IDRC contributed to other research networks involving national research programs across Africa. These include PRAPACE for potatoes and the Eastern and Southern African Rootcrops Research networks, the Agroforestry Research Network for Africa, the Africa Network for Agroforestry Education, and Central Africa Beans Research Network. Other networks and regional efforts such as the Banana Research Network for Eastern and Southern Africa, and East and Central Africa Agricultural Policy Analysis Program were created more recently. Their continued support by national and international agricultural research organizations and donors are proof of their value. The Centre also contributed to the establishment and support of SACCAR in Southern Africa, ASARECA in East and Central Africa and CORAF in West Africa as regional-agricultural-research associations, and it is now assisting them to incorporate NRM principles and tools as part of their agendas and approaches. Early in 2000, ASARECA defined a specific policy regarding the explicit incorporation of NRM concerns as part of the agricultural research implemented by all participating national programs and regional research networks in Eastern and Central Africa. PLaW was active in promoting and in assistanceing to design this policy.

Through on-going consultation with partners, PLaW will continually strive to identify innovative research activities and lessons from previous efforts that will contribute to and not duplicate the complex of projects being implemented by others. The strong ties of these partners to IDRC give PLaW a comparative advantage to: (a) effectively promote, among them, a better understanding of the conditions under which improved and sustainable food and water security can be achieved at the community level, (b) build on this knowledge for policy formulation, and (c) contribute to the development and dissemination of the technologies, policies and innovative approaches needed to make this possible.

2 GOAL AND OBJECTIVES

The Goal of the People Land and Water PI is:

To promote the equitable, sustainable and productive utilization of land and water resources by rural women and men in stressed ecoregions of Africa and the Middle East in order to enhance their income, food and water security.

PLaW adopted FAO's (1996) definition[3] that food security is "access at all times to the food (quantity, quality, and variety) required for healthy and productive life". Drawing on this, PLaW defines water security as "continuous access to an adequate supply of water in terms of quantity and quality that is required to meet the requirements of food security and a healthy and productive life".

PLaW will continue encouraging relevant networks and partnerships of developing country and international researchers to assist the PI in pursuing three strategic research objectives that lead to the goal of enhanced income and food and water security. Furthermore, PLaW will focus its research support on soil productivity and water demand management related issues as entry points for addressing food and water security respectively (see section 3.1.1). Most projects will be initiated through relevant requests for financial assistance from IDRC's partners. A few projects will be initiated by PLaW in order to facilitate a synthesis of the lessons learned from a variety of research activities supported by IDRC and other donors. The three PI objectives with example projects highlighted in boxes follow:

a) **To enhance understanding and knowledge to manage the systemic and external factors that lead to degradation or improvement in the productive and service capacity of land and water resources.** Research areas include the structure, function, and best management practices of priority natural resources systems of importance to human populations and development in AME. Key gender, social, economic and policy factors along with current and traditional local coping strategies and technologies will be emphasized. Biophysical factors will also be researched as needed to identify the reasons for resource degradation and option for improving resource management in targeted communities. Example projects are given in boxes 1 and 2.

b) **To contribute to local and national policies and institutional arrangements that, by managing intrinsic conflicts, equitably increase access, availability, quality and productive utilization of land and water resources.** Research will build on the understanding gained in the first objective to enable policy makers to effect changes in natural resource management that will increase sustainable use of land and water resources. Policies and organizations that facilitate community level conflict resolution or that provide incentives for efficiency and equity in the allocation of land and water resources will receive attention. Example projects are given boxes 3 and 4.

[3] The team recognizes that more precise definitions of food and water security can be written. Although these are useful for some projects, the more general definitions are preferable for general use.

Improving crop-livestock productivity through efficient nutrient management in mixed farming systems of semi-arid Africa

Soil nutrient mining through loss of crop residues is a major systemic factor causing land degradation in the semi arid ecosystems of West Africa. Farmers know that by-products from crops can be fed to livestock that in turn produce manure that can enhance future crop production. Researchers will build on this knowledge to improve current traditional and local coping technologies by developing integrated crop-livestock systems. These can prevent nutrient loss through improved corralling systems, efficient inclusion of farm crop residues in animal feed to increase quantity and quality of manure. The intention is to increased nutrient recycling. Since in the long run, it may be difficult to maintain a completely closed system of nutrient cycling without some form of external supply, researchers will also investigate the combination of external but locally available fertilizers (local rock phosphate) with the organic farm manure to restore soil fertility and enhance food production. The project will be also examine the possibility of removing the negative and emphasizing the positive effects of a number of external factors that may prevent the adoption and sustainability of these improved local strategies. For example, some local institutional arrangements for corralling, grazing rights, and fencing may constitute a disincentive, as may the gender division of labour, or policy incentives for the utilization of local rock phosphates.

Box 1. Example of recipient initiated project targeted at objectives a & b.

Food security through enhanced soil productivity.

Throughout much of Africa and the Middle East, livestock and crop production resulted in widespread soil degradation. This led to inefficient use of rainfall, increased crop and animal diseases, greater food insecurity, declining poverty and human health, and diminished biodiversity. Many factors contributed to these processes. This initiative, started in Phase I, seeks to raise awareness among stakeholders about the severity and extent of soil degradation in AME, to promote better understanding of the processes that lead to degradation, to identify and encourage adoption of technologies and policies that will reverse the decline and promote enhanced and sustainable agricultural productivity, and to encourage use of multi-way communication strategies that include local participation. This initiative is supporting community based and participatory projects in which both, the existing knowledge and the ways in which community dwellers acquire and communicate such knowledge, are studied. This will provide the basis to build up the community technical and organizational knowledge about soil productivity management and effective channels for the required two-way communication between researchers and community people. While not excluding the formal research community, this initiative emphasizes farmers, community groups, and NGOs as potential beneficiaries of the PI's work. In addition to consideration of biophysical and socio-economic factors, it considers methods that encourage participation by disadvantaged communities and strata of society.

Box 2. Example of a PI initiated project targeted at Objectives a, b, and c.

East and Central Africa Program on Agricultural Policy Analysis (ECAPAPA)
This is a program of the Association for Strengthening Agricultural Research in East and Central Africa (ASARECA). This multi-donor-funded network of researchers that was started with IDRC support, will eventually be linked to similar emerging networks in Southern Africa and West Africa. The main objective is to engage and ensure the participation of agricultural researchers in agricultural policy analysis and definition, across the region. At the moment, agricultural researchers do not participate in these processes, despite their expertise and knowledge of the sector's opportunities and constraints, in terms of human (people) and natural (land and water) resources. The vision is to ensure a better integration of community and household level concerns (the micro) with the macro concerns that have hitherto predominated in agricultural policies. This balanced approach to policy formulation, will improve the potential contribution of the sector to overall development. Access to quality agricultural resources, including land and water, by communities are among the micro concerns of the program, and these will be evaluated from equity, sustainability and economic efficiency (market and technical) perspectives.

Box 3. Example of a recipient initiated project targeted at Objective b.

Water Demand Management Research Network in the Middle East and North Africa:
In AME, water supply has not kept pace with rapidly increasing consumption. Many countries already consume much more water than their annual renewable supplies. Increasing economic and environmental costs involved in tapping the few remaining natural water stocks, are calling for new and complementary approaches. One is the shift in water management perspectives from the conventional supply-oriented approach to a demand management approach that seeks to balance the requirements of current and future generations with the water provision capability of host ecosystems. The PI assisted to establish Water Demand Management Research Network for the Middle East and North Africa and for Southern Africa. Their aim is to enhance applied research on WDM and the effective dissemination of findings to policy makers and to water end-users. This PI is also working in making these networks a multi-donor-funded effort and institutional mechanism for sustained support to a wide range of WDM related activities including research promotion, capacity-building and dissemination. The purpose is to enhance the likelihood that demand-management-practices, measures and policies will be promoted and adopted leading to more efficient and sustainable management of the limited water resources across the region.

Water Hyacinth Information Partnership:
Introduced about a century ago, water hyacinth causes enormous socio-economic and environmental problems among communities, institutions and businesses reliant on water bodies that are now infested with this weed. It grows fast and the infested area can double every few days. Despite available experience, knowledge and capabilities for water hyacinth control, actions to fight the weed have usually have started only after it has reached crisis level. A regional survey and a consultative workshop organized by PLaW (September 17-19, 1997 in Nairobi) confirmed this is in great measure due to a poor flow of information. The objective of this activity is to promote and support the installation of a “Water Hyacinth Information Partnership” as a multi-donor initiative. This will be an information communication mechanism to facilitate the flow of relevant information among the actors concerned. It should raise awareness and motivate and enable countries and communities to react more quickly and effectively to the water hyacinth threat. This project will also address objective c.

Box 4. Two examples of PI initiated projects targeted at Objective b.

c) **To develop or use communication strategies that facilitate the exchange of information and knowledge among stakeholders and foster participation in development initiatives.** Most current communication strategies rely on top-down one-way communication to inform and mobilize people to effect development. However, past experience demonstrates that development is impossible without direct participatory decision-making by local communities. Communication is the key to facilitate this participation. Strategies are needed to ensure that affected people are not just recipients of "top down" messages from decision-makers and experts. They must also actively participate in development planning with other stake-holders. Strategies to achieve this must involve a number of processes including:

- Facilitating problem identification and research of solutions by the communities;
- Identifying useful local knowledge and facilitating the circulation of that knowledge among different communities; and
- Promoting appropriation of development initiatives by local communities;

Example projects are given boxes 5 and 6.

A bottom-up approach to combatting desertification

In the West African Sahel, land degradation and desertification threaten the livelihood of millions. Despite national and global efforts to reverse the trend, the situation continues to deteriorate, primarily because the traditional approaches to finding solutions have been top-down. The global convention to combat desertification proposes to turn this approach upside down, and support action programmes that are based on local participation. In the Desert Margin Initiative, initiated with support from the PI, local populations in collaboration with communication experts and researchers, design communication strategies to inform and sensitize communities to the problem, and to the letter and spirit of the Convention, in order to mobilize them to fully participate in National efforts to combat desertification.

Box 5. Example of a recipient initiated project targeted at objective c.

Local Management of Natural Resources

Local or community-based management of natural resources (LMNR) is an important topic in Africa. A trend in policy encourages the devolution of authority over natural resource management to local governments and acceptance of greater responsibility by local communities for management. IDRC supported LMNR type projects over the past 10 years particularly in Southern Africa. The Centre has excellent working relationships with leading research institutions in the region. Extensive discussions with key partners in the region revealed a clear niche for the PI to assess and disseminate the lessons learned from LMNR projects, not only within a "sector" or resource (e.g. forestry) but across sectors. This is being attempted through the LMNR network of researchers created by the PI in southern Africa. While the network will shape the LMNR agenda with respect to the conduct of research in water and soil management, contribute to electronic and face-to-face interaction, its primary goal is to document the various experiences learned throughout the region. This will draw out the commonalities and differences and the circumstances and where LMNR is most likely to succeed.

Box 6. Example of a PI initiated project that addresses objective c.

3 PROGRAM IMPLEMENTATION

3.1 Research Focus

The goal and objectives of PLaW reflect global priorities that need attention in AME. This regional focus is complementary to the efforts of Managing Natural Resources PIs in Latin America and the Caribbean (MNR-MINGA), and Asia (MNR-CBNRM). However, AME is a huge region with a great variety of ecosystems and cultures each facing several issues and sectoral concerns, all of interest to PLaW. To ensure that PLaW makes most efficient and effective use of limited financial resources, the PI will continually sharpen its focus by consulting with partners, reflecting on its achievements, and selecting research activities that take into account IDRC's comparative advantage. For the coming three to four years (2000-2004), PLaW will focus its work according to issue, sector and ecosystem.

3.1.1 Focus by Research Issue: The two key foci for PLaW are food security and water security. To narrow these foci further, the PI will emphasize the issue of soil productivity as the prime entry point into research on food security. Similarly, water security will be addressed through the research on Water Demand Management (WDM). Even though today there are many more players and donors focussing on water issues than when the PI started three years ago, WDM is still a novel and promising area for research and development on water security. Most players (and donors) continue to focus on centralized means for water supply and delivery to the neglect of options that approach water quantity and quality problems from the demand side. Though the team will continue to assess its position and entry when focussing research and development on water security, it believes that it has identified an appropriate niche. Since, PLaW recognizes the importance of local people in natural resource management, the PI will integrate the cross-cutting concepts and methodology of community-based or local management of natural resources (LMNR) in the implementation of research on WDM and Soil Productivity. Subjects such as land tenure, and others that could produce conflicts in the access to resources, will be considered mainly in the context of their contributions to food production or sustainable resource management and utilization. All project support by PLaW will address either or both of these research issues.

3.1.2 Focus by Sector: PLaW will focus its work in rural rather than urban areas. Nevertheless, because of the significant debate as to the appropriate balance among sectors in many economies, the focus for water will include macro questions relating to the appropriate allocation between rural and urban areas.

3.1.3 Focus by Ecosystem: The sub-regions of AME are so diverse that it would be inappropriate to identify a single ecoregion for work within the PI. The relative importance of each ecosystem in terms of production capacity, and the extent of degradation, varies from one sub-region to another. For example, degradation is quite severe in the arid zones of both the West African Sahel and the Middle East. However, rangelands of the Middle East still carry a large proportion of the livestock that subject them to great stress; in contrast, extensive human migration is taking place in the Sahel from arid to semi-arid and sub-humid lands. Thus, while PLaW may want to focus on arid lands in MENA as a whole, it is fitting to shift emphasis to semi-arid and sub-humid areas in West Africa.

Semi-arid zones occur so broadly across Africa and the Middle East that they represent a general focus for the PI. In addition, within each region, a second ecosystem was selected,

depending upon where productive capacity was threatened, as a further area of focus for work in that region:

- Arid Lands in the Middle East and North Africa (MENA)
- Highlands in East and Central Africa
- Sub-humid Lands in West Africa
- Sub-humid Lands in Southern Africa.

3.2 Expected Outputs

While each supported research activity must stand on its own merits, PLAW's overall contribution will be more than the combined contributions of its projects. The PI's work will lead to a greatly improved understanding of and, hopefully, capacity to manage the issues related to land and water management and utilization in AME. The PI's activities will produce improved information for policy makers. For example, based on information provided by project 03784: Dead Sea Environmental Management Plan, UNESCO is considering designating the Dead Sea as a World Reserve. It will also include strengthened capacity of developing country researchers and networks to carry on future research. An example is the agreement with the Organization for Social Science Research in Eastern and Southern Africa (OSSREA) to be mentioned in section 3.4.3. Capacity Building below. Other anticipated outputs are increased knowledge and better utilization of proven local and indigenous knowledge for sustainable land and water utilization and improved communications and collaboration among local stakeholders concerned with improving food and water security.

In addition to the sum of the achievements arising from the projects and Research Support Projects (RSPs), PLaW will support a number of efforts to identify and highlight lessons and specific products and developments that result from the collective synergy and synthesis of PLAW's research activities. These will also engage the team as part of a series of activities under the heading "closing the loop". They include the review of PI and related work done on key areas of focus, to extract lessons and assess the value of results being obtained, for documentation and management decision purposes. Areas selected: conflict- management, water security, and gender.

3.3 Reach

PLAW's strategic aim is to strengthen the capability of researchers to contribute to the PI's goals. To achieve this, the PI's reach will emphasize not only the researchers themselves, but also their leaders and groups or individuals (at local, national and international level) who can influence research through use of results or provision of support. All of these partners will be linked with the team's efforts on a continuous basis.

The range of potential research partners or reach was partly addressed in section 1.2 above. With respect to research users, potential partners and reach include representatives of the final beneficiaries, possibly local NGOs and participating farmers' or women's groups. These also may include intermediary agents such as public extension and NGO agents, and producers' traders' and processors' groups. In general, appropriate partners will be identified for specific projects and activities at the site level.

On the research support side, potential partners and reach include policy and opinion maker groups at local and national levels, in the public sector. Examples include:

- members of local councils and government (parliamentarians, institutional leaders, etc.),
- donors (governments, NGOs, bilateral such as USAID, CIDA, the Swiss Development Cooperation, the World Bank, the African Development Bank, the European Union and foundations such as Ford or Rockefeller),
- sources of technical support, training and capacity building (e.g., universities in target countries and Canada, IARCs, regional institutes such as the Centre for Applied Social Sciences (CASS) in Zimbabwe, the Eastern and Southern Africa Management Institute in Tanzania, etc.). and
- private sector firms with a current or potential interest in the research results.

The above identifies researchers and many other potential "boundary partners" (à la Evaluation Unit) for the PI. The PI will continue promoting that, during research design, partners provide a vision of the "impact" targeted by their research, and of how the results expected from the research will link up with such impacts, identifying the actors that must take on the results once available and what will be done to ensure they do take those results at least to a next step.

3.4 Relationship to Special Elements of CSPF

PLAW's scope of work, ambition, approaches and focus relate directly to the Environment and Natural Resources Management program area but also strongly to the Social and Economic Equity program area. Furthermore, it can make a great contribution in terms of information content and ways to relate to communities in relation to the agenda of the Information and Communication Technologies for Development program area. IDRC's Corporate Strategic Policy Framework (CSPF) recognizes the need for publicly-funded research on fragile environments: this is reflected in the ecoregional focus of PLaW. Its people-centred approach puts Sustainable Employment, Community Health and other equity concerns at the centre of its expectations in terms of final impacts. The recent external evaluation of the PI first phase acknowledged its balanced attention to gender issues as part of all funded activities. The work and success of the PI depend on the proper identification and use of information and communication tools and approaches.

3.4.1 Links with Other PIs: The PI will put attention, PO efforts and funds to collaborate especially with other MNR-PIs in order to enhance overall effectiveness and efficiency in PI delivery. The PI has already identified team members as focal persons with responsibilities to lead the team and to report on progress and results from PI interaction with the other MNR-PIs, SUB, CFP, PBR and ECOHEALTH respectively. Areas for collaboration in which PI joint activities will likely occur are being identified and evolving quickly. Options include:

- Raising awareness on the potential of new approaches to co-management of natural resources, and to encourage dissemination and uptake of these approaches (the three MNR-PIs)
- Support research and synthesis of lessons and best practices regarding "scaling-up, generalisation, extrapolation or spill-overs" resulting from the NRM work promoted by the PIs (the three MNR-PIs)
- Assess and document the use and contributions of multidisciplinary, participatory and partnership concepts, tools and methods as part of NRM research (the three MNR-PIs). MNR-PLaW has started this as part of project 98-0806 AHI Performance Assessment (financed by the Evaluation Unit). This project is focusing on the experiences of the African Highlands Ecoregional Program of ASARECA, which is being supported by IDRC though project 98-8548 African Highlands Resource Management (II) and other donors.

- Assess and document the use and contributions of ecosystems analysis concepts and tools as part of CBNRM type research (MNR-PLaW, MNR-CBNRM and ECOHEALTH).
- Resource expansion focusing co-funding (the three MNR-PIs).

3.4.2 Multidisciplinarity and Interdisciplinarity: Natural resource management fails when it is conceived and practised within a single discipline. All of PLaW's projects draw on more than one subject area because they link various social sciences, several relevant aspects of NRM related biophysical sciences and communication sciences. PLAW's emphasizes appropriate interdisciplinary approaches both in the work of the team and in research proposals designed and implemented by partners. The PI team includes members with training and experience in political science, economics, sociology, ecology, forestry, agronomy, range management, veterinary science, engineering, soil science, and communications. These individuals are committed to the integration of relevant diverse perspectives in the PI's 3-year programme.

3.4.3 Capacity Building: In the past, IDRC supported projects that focussed on research capacity building. These provided "first generation" training, supporting M.Sc. or PhD training for individuals, and "second generation" training which equipped laboratories or supported institutions. PLaW seeks to support researchers who can work in a multidisciplinary and participatory mode, and are responsive to other considerations such as the need for social and gender analysis in natural resource management. The PI's three years experience has confirmed that there is only a limited pool of researchers with such capability in the AME region. Fortunately, there are a few institutions with the capability to provide such training to others. Some of these institutions themselves benefited from IDRC first and second generation training efforts. This provided MNR-PLaW with the opportunity to activate a "third generation" type training in the region, utilizing the training capacity created earlier. One such experiences so far is in the agreement (project 98-8553 Capacity Building for Monitoring, Evaluation and Social Analysis in Natural Resources Management) between NRM-PLaW and the Organization for Social Science Research in Eastern and Southern Africa (OSSREA) for support in training and technical assistance in social analysis for PI supported researches throughout the region.

To contribute to further capacity building in the AME region, NRM-PLaW will continue some or all of the following:

- include capacity building as an explicit objective in projects where a felt need is identified and, as appropriate, include capacity building activities, such as seminars and internships into the pipeline;
- use senior researchers as resource persons for the PI, paying them honoraria or consultancy fees to provide needed back-up support;
- enter into agreement with other AME-based institutions, such as OSSREA, to provide formal, targeted training of PI researchers at M.Sc. and other levels;
- facilitate linkages and interaction between stronger and weaker researchers and research capability sharing and exchange.
- provide capacity building of community-based organizations working directly with people at the grassroots level, e.g. women's groups, local NGOs, producer groups, etc. This might be appropriate to help such groups participate in the research process or to make use of promising research results.

3.4.4 Gender: IDRC program staff have become aware of the complex productive and reproductive roles played by women in different societies. Men and women have different approaches to the use of natural resources and it has been recognized that effective programming must take these into account for reasons of equity, efficiency and sustainability. For example, women in Africa, who are mainly responsible for gathering and providing fuelwood, tend to be very conscious of the advantages of conserving forests near settlement areas; men, on the other hand, tend to see fuelwood as an immediate commercial venture and are less concerned about longer-term forest conservation. More broadly, not only does every project have social impacts but those impacts can, and likely will, affect different groups differently. Social analysis in general and gender analysis in particular are, therefore, important in answering questions related to equity but also others related to efficiency and sustainability in the access and use of natural resources. Examples of these different type questions follow:

- ***Equity:*** Are women being represented in decisions about resource use? Are they given real opportunities to participate and potentially benefit from research? Do men and women have adequate opportunities to access resources and benefit themselves and their communities? Do low income and younger women face particular obstacles?
- ***Efficiency:*** Are both women and men accessing/utilizing the resources, and, if so, for what purposes? To what effect and efficiency? How are the returns from resource use allocated?
- ***Sustainability:*** Who will use a new technology that has been brought to the community, and how will he or she use it? What will be the environmental impact of this use, and for whom will those impacts be deleterious or beneficial? What inputs and labour are required to sustain the use of this technology?

The PI team is responsible for discussing these considerations with partners in a supportive way, which includes: a) emphasis on efficiency and sustainability as well as equity and human right considerations; b) presenting concepts in understandable and practical language, always open to discussion; and c) provide for training when needed. The approach must be gradual but firm and appropriate to the circumstances. It is important to develop gender strategies which are appropriate to local customs rather than confrontational. Specifically, PLaW will:

- Encourage researchers to give a greater weight to gender analysis than previously, make available updated guidelines and, when necessary, provide training.
- Encourage the formation of research teams that include gender specialists, in keeping with the PI's commitment to multidisciplinarity.
- Share and revise proposals at an early stage of project development to ensure that the gender dimension is considered in the definition of the project, and the research design.
- Promote projects that specifically address gender when appropriate in the context of PLAW's overall goal and objectives.

MNR-PLaW has already actively implemented these guidelines and supported an important body of activities that address gender issues specifically. For example, with the collaboration of the Gender and Sustainable Development Unit in Ottawa, NRM-PLaW commissioned two papers on social and gender concerns in water use, for presentation at the IDRC's workshop on water demand management in AME in Cairo in May 1997. The PI

has supported the work of four female interns that has been strong in its attention to gender issues. During the year 2000/2001 the PI will support a small research grant project on "gender-aware agricultural research" in Eastern and Southern Africa. This activity is to promote mainstreaming of gender in agricultural and natural resources management research, but also to promote the use of resulting gender segregated research information in decision making by agricultural and natural resource management researchers and policy makers.

3.4.5 Canadian Collaboration: The Canadian academic and NGO communities have considerable expertise and experience with land and water resources, including work at both the policy and the community levels. PLaW already has supported several projects that include Canadian collaboration and plans are underway to develop others. Usually the collaboration involves direct participation of Canadians on research teams. For example, two professors from Trent University, specialized in environmental economics and economic anthropology, are enhancing the ecological and botanical capabilities of an Egyptian team working on options for sustainable development in Wadi Allaqi . Occasionally Canadians have been asked to lead specific components. For example, a Canadian resident in Harare headed a 4-person team of consultants tasked with identifying existing work on water demand management in AME's four sub-regions. Currently, IDRC/PLAW, CIDA and Laval U are discussing potential collaboration on soil amendment and on research and development efforts to combat desertification.

3.4.6 Connectivity: PLAW's success will depend on continuous communication and interaction among team members, on discussion with outside partners, and on constant communication of all partners with final beneficiaries. To some extent this is already happening due to electronic and other connections activated with and by PLaW projects like the African Highlands Initiative (AHI). PLaW is also benefitting from connectivity efforts undertaken by partner donors, such as the USAID "Africa Link" project that connects members of several agricultural research networks in SSA. Some of PLAW's projects will provide context and content to ACACIA efforts, such as the AHI already mentioned. Improved connectivity for enhancing PLAW's interaction with partners will continue to be of concern of the team, especially during the design and start-up of new projects. PLaW, in partnership with MINGA in IDRC, and ILRI, an external partner, supported a global electronic conference on the role of livestock on the degradation of land or restoration of degraded land. This consultation raised awareness and solicited views on research priorities from more than 1,000 participants in 84 countries. PLaW has installed its own website as part of IDRC's website. It will be constantly updated with information about PI activities and relevant results.

3.5 Dissemination and Research Results Utilization

For PLaW the impact of research is in the utilization of results. This again puts the people (users) at the centre. However, reaching the user to promote utilization of research results is not simply a matter of post-research dissemination efforts. Instead, the users must be engaged from the inception of the research effort. This will shorten and make more cost effective the whole process of research, result dissemination, adoption and utilization. But even when potential users have been involved in the research process, PLaW encourages researchers to be proactive in the process of disseminating and advocating for the utilization of research results. PLAW's PI initiated projects (e.g., WDM and Soil Productivity) begin from a strong drive to collate and disseminate already existing appropriate research results. PLaW recognizes the importance of

keeping relevant extension agents, potential investors, decision makers and policy makers aware of and interested in the potential benefits from the application of the expected research results. They can be instrumental in the continued support of the research and in dissemination of results. The research approaches promoted by the PI (e.g., linking researchers with extension and other agents as well as with beneficiaries) are conducive to having result dissemination and utilization as indicators of achievement.

The PI has been and will continue paying close attention to the processes of communication among community dwellers and on how to improve two-way communication and learning between “technical people” and those in the communities. This is to complement our effort to discover knowledge of value in the communities and the external knowledge that can improve what already exists there. These are steps needed to also learn how to present and channel available knowledge to facilitate its appropriation and utilization by the end-users of resources. Means finally selected may include some traditional or more modern but appropriate tools such as expert systems to improve the communication of knowledge at community level. This angle of concern opens up more opportunities for collaboration with the ACACIA program.

3.6 Scaling up from community based research to wider application of results

The PI experience to date indicate that development and implementation of community based activities which integrate multidisciplinary and participatory approaches, building of partnerships and mustering of funds are labor and time intensive. They also require a larger critical mass of people and other resources, usually focusing on specific sites for longer time. Even though indications are that such approaches are more effective for reaching the ultimate beneficiaries, there are concerns regarding higher costs as well as pending questions on effective scaling up and spill overs. Researchers supported by the PI will be encouraged to respond to these concerns as part of their work, by putting more attention to concepts of statistical inferences for generalizations, a deeper understanding of the people situation for inference and recommendations of wider application, and the sharing of diversified experiences and knowledge to improve inferences and recommendations. Furthermore, and since this is a common concern across the MNR-PIs, it will be addressed as part of the collaborative activities being planned during the year 2000/2001.

3.7 Team Work, Project Cycle and Fund Allocation

The PLaW pipeline is developed around a number of principles established by the Centre and/or by the team itself. PLaW will allow and indeed, anticipate, flexibility in the quality of the research, depending on timing, situation, and the nature of the research group. However it is essential that all supported projects advance the objectives of the PI. This implies that each proposal should have a clear research question, a developed methodology, and a development area, all fitting the PI’s framework.

PLaW has designed a set of operating procedures and internal controls to promote efficiency of operations, individual responsibility and accountability. Details are given in Annex A. PLaW projects occasionally may be developed by officers who are not members of the core team and the non-PLAW officer will become an "acting core member" for the purposes of the particular proposal. However, when the project is finally supported, either the responsible officer or the alternate PO listed in the project documentation, must be a core member of PLaW.

All PLaW objectives have both a 3-year and a longer-term perspective. At the outset, the team has agreed to allocate at least 90 percent of PI funds in accordance with PLAW's foci. Up to 10 percent of funds can be used for exploratory or complementary activities sanctioned by the team within the objectives, but outside the interim areas of focus. When funds are available, RSA funds are allocated as follows: First, each team member receives a notional allocation of $10,000 for program and project development in accord with PLAW's objectives, without prior reference or consultation with other PI members. For expenditure beyond this allocation, the PO must negotiate with the PI team. Each PO is expected to provide the necessary documentation for any RSAs to the PI secretariat and to the team leader. The remaining RSA funds, including funds for supplements, are distributed by a similar process to that used for projects.

4 IMMEDIATE ACTION PLAN

PLaW's immediate action plan consists primarily of managing existing projects and start implementing the work-plan presented for approval by the BoG in its June 2000 meeting. An analysis of PLAW's projects since early in 1997 reveals a good balance of attention to its three objectives. Initially, 'objective 3' was the weakest and 'objective 2' the strongest. The team did a good job balancing this. The team was also able to maintain a good balance among partners that come from government and non-government organizations as well as from organizations working nationally and locally. Annex B provides the work plan as presented to the BoG.

5 DELIVERY AND EVALUATION; HOPES AND FEARS

Land and water are so central to life and well-being throughout Africa and the Middle East that there is no obvious terminal point for the PLaW endeavour. At the outset of Phase I, what was at issue was whether in three years the goals and objectives of PLaW would be advanced significantly by the PI's activities. The evaluation of the PI found indications of satisfactory progress on which a second phase could be built with confidence. One of the main lessons from the first phase relates to the need for more capacity building on cross disciplinary and participatory methods among research partners. This is crucial to enable partners to design and participate in activities that take on the objectives and apply the approaches promoted by the PI and effectively strengthen the capacity of researchers and partners to make tangible contributions to the well being of targeted beneficiaries.

5.1 Impact

It is difficult to identify the unique impact of MNR-PLaW activities. Although the PI brings a novel approach and strong capacities to the field, land and water are hardly new issues in Africa and the Middle East. They are the priority and many people and donors are working on them. Some of the topics chosen for special attention, such as water hyacinth, have been studied at length. Indeed, part of the rationale for adopting water hyacinth as a subject of special study was to find out why results on the ground have been so meagre despite so much study. Other subjects, such as water demand management, have also been "discovered" almost simultaneously by several other donors (e.g., Swedish International Development Authority and UNICEF) and a number of recipients (e.g., Land and Agriculture Policy Centre in South Africa, SADC in Southern Africa and almost all Middle Eastern countries). Moreover, other changes are occurring through the normal interplay of socio-economic and political forces, as with the increasing extent to which water is priced on the basis of cost, or in some cases, not priced at all. Although MNR-PLaW is targeting important gaps in those efforts, it will be impossible to distinguish with confidence the impact of the PI funding from other activities and events. However, it will continue to pay attention to the

identification of “best bet” areas neglected by research in order to increase the likelihood of significant impact.

Because of these lessons, the PI welcomes the new approach, being promoted by the Centre through the Evaluation Unit, of focussing more on the outcomes of research and on our influence in the behaviour of our direct (boundary) partners when assessing our delivery.

Despite difficulties, MNR-PLaW recognizes the validity of questions about impact. On a project-by- project basis, as indicated in section 3.3, the PI will continue promoting that during research design, partners provide a vision of the “impact” targeted by their research, and of how the results expected from the research will link up with such impacts, identifying the actors that must take on the results once available and what will be done to ensure they do take those results at least to a next step.

MNR-PLaW is also conscious of the importance of maintaining a good network of contacts to enhance impact potential. For this, every research team funded by MNR-PLaW will be encouraged and supported to maintain active contact and interaction with relevant extension agents, potential investors, decision makers and policy makers and to keep them aware of and interested in the potential benefits from the application of the expected research results. This strategy will be instrumental in the continued support of the research and in the dissemination and impact of its results.

5.2 External Risks and Barriers

As is true for all PIs working in Africa, a risk facing PLAW-type work is the chronic instability of many countries in the AME region. PLaW will factor in risks related to political instability in project development and to the extent possible, design studies to be resilient under worst case scenarios. Networks provide one way of managing these risks since they can exist even in the absence of infrastructure and even if some nodes are temporarily unable to maintain contact. Moreover, experience with specific projects indicates that researchers who have started working together will continue to do so despite potential problems.

A more direct risk arises from barriers to undertaking research and to implementation of research results that occur at two levels -- community and policy. Land and water are central to life throughout AME, and there are strong existing traditions about how they are to be used, shared and managed. In some cases, these traditions are secret or covert. More commonly, they are biased in favour of one class, sector, region or gender, and consequently biased against others. Many people may be unwilling or unable to participate in research for cultural or economic reasons. Careful research design can usually get around these barriers, but it requires considerable sensitivity to local circumstances, coupled with careful selection of researchers.

Many governmental authorities are still reluctant to accept the need for new policies, and even more so, to implement them. Over time, land and water policies have been based around central management with emphasis on expansion of the quantity of the resource available and secondarily, preservation of its quality. In the case of water resources, this central management trend, with a focus on supply and delivery of water, has been led mainly from the engineering and construction disciplines. Alternatives such as local management, demand management, and various forms of small-scale water harvesting are of marginal interest. In some circumstances, these novel approaches are opposed even by NGOs. Land policies are similarly limited in their attention to local options and conservation. Formal structures, however, are generally less

centralized because of the greater diversity of uses and geographic conditions of land when compared with water.

Under the above conditions, barriers to research and to the utilization of research results are typically very high. This problem is not limited to AME or to "the South", but also affects industrial countries. PLaW will be alert to these dangers and seek projects that cannot be ignored by decision makers. Indeed, the decision-making process for utilization of land and water will itself be a topic of study.

5.3 Monitoring, Evaluation and Accountability

As reflected in the evaluation plan table (Appendix C) the PI team will focus on three levels/areas for monitoring and evaluation purposes: overall program objectives, key dimensions of program focus, and team. In general, however, the PI evaluation and accountability start with the review and approval of projects. Details of these team processes are outlined in Annex A. In general, each team member is responsible for ensuring and explaining how the project s/he brings for approval will contribute in specific ways to the achievement of the agreed PI objectives. These projects must also contribute to the PI's program implementation, its components and conditions, eespecially those that respond to the IDRC CSPF as discussed in section 3. The PITL is accountable for encouraging and engaging the team in these processes. The NRM-PLaW team will meet at least once annually to review progress and undertake consensus-based program planning. The dialogue among team members will be continuous via e-mail.

5.3.1 Project Monitoring and Evaluation: Project evaluation begins with the review and appraisal of proposals (see Annex A), and continues with monitoring of project performance by PI team members and (in some cases) project advisors. Project monitoring is intended to evaluate interim performance and assist recipients with technical and administrative matters needed to ensure successful completion. It also provides a chance to appraise the capacity and skills of the partner institutions as guidance for potential follow-up project development, training plans or networking. Large and key projects or networks will probably include specific plans and support for external evaluation. This type of evaluation will be used in selected projects since both experiences and advice from recipients indicate that external evaluations do not always provide the required feedback. The basic "project evaluation" will assess the achievement of project objectives; the validity and significance of its results; the effectiveness of project management; dissemination of project results; and its impact -- whether it reached the intended beneficiaries (see Annex C).

5.3.2 Program Evaluation: Considering that the PI goal and objectives are responsive to the identified development problem and opportunities, PI performance is measured by how well it is approaching its goal and objectives. A basic indicator will be the correlation between the objectives and outputs of projects and other activities, with those of the PI. Team members are responsible for ensuring these links are made. Other elements of program performance may not be as easily available from individual projects. These include resource expansion, reach and impact, networking and information exchange or dissemination, multidisciplinarity, capacity building, gender mainstreaming, etc. Some will require simple documentation and accounting; others will require surveying of partners and recipients. A simple set of guidelines for monitoring, documentation and analysis of PI progress and performance regarding key critical program dimensions is presented in the evaluation plan table of Annex C. They are to evaluate and recommend on the continuing

validity of PI's development problematique, its goal and objectives and the progress made to date.

5.3.3 PI Team Evaluation: Ultimately, the program's performance is a reflection of the team's performance. Both can be enhanced by the drive, dedication and hard work of each team member, facilitated by effective PI management and leadership. This monitoring and evaluation will be based on self-assessment of individual and team performances.

- **Self Assessment of Individual and Team Performance**: Individual team members will be responsible for assessing their own and the team's performance in relation to planned and agreed tasks, activities and accomplishments. These self-appraisals will be conducted individually, but recommendations for improvements in team performance will be shared and discussed with the team. Confidential Annual Performance Appraisal Reviews of team members by the PI Team Leader will supplement their self-appraisal and recommendations.

  In evaluating the PI, team members will agree on specific responsibilities regarding the guidelines presented in Annex C.

- **Team Leadership Assessment:** This will be now done by management.

6 RESOURCES

6.1 Financial Resources

Estimating from the corporate PWB figures and projections, the PI will receive a total of about CAD 8,500,000-9,000,000 from IDRC during the next three years. From 1997/1998 to 1999/2000 the PI received CAD 12,160,000. In addition, the PI expects to raise at least a further 6,000,000 CAD in parallel and other forms of RX results during the next three years. This RX minimum target is comparable with the amount raised in terms of parallel during the first phase. For the present year, PLaW has advanced discussions that could result in at least CAD 2,000,000 of parallel funding and up to CAD 200,000 of co-funding. Furthermore, resulting from long partnership work with ASARECA and other donors, the European Union is about to release a project of 20 million ECU to support the work ASARECA, which the PI helped to start and still supports in East and Central Africa. Team expectations are that with PBDO support the PI will raise about CAD 500,000 per year in co-funding during the next three years. The team will also continue stimulating greater counterpart contributions, beyond the usual in-kind endowment from recipient partners. Research partners will also be engaged in RX activities as often as possible.

Beyond co-funding, there is clear potential for significant support and a cadre of active partners for the topics of concern to PLaW. This should continue providing good opportunities for collaboration with other donors in funding and implementing research. Numerous ongoing PLaW projects are being financed in parallel with other donors, including USAID, the Ford Foundation, the Rockefeller Foundation, Swiss Development Cooperation, and the European Union.

The PI will organize its resource expansion plan around the following principles:

- The PI team will maintain a proactive approach to developing projects and mustering added support to enhance PI reach and impact. In doing this, however, its stance will stay more that of a scientific team than of a consulting group.

- The PI will keep a flexible approach. Pan-African or even sub-regional initiatives may not be amenable for quick fundraising. Therefore, the team will be ready to give out individual portions of projects that may be more attractive to other donors.
- The team has agreed to incorporate RX more strongly as part of its "mental set-up" when discussing PI plans and new activities internally and with partners.
- Co-funding is being emphasized from the start in this second phase in all PI special initiatives, especially the Water Demand Management Research Network (WDMRN) and the Communication for Improved Soil Productivity Management by Communities.

6.2 Human Resources

The NRM-PLaW team is presented in Annex D. The team stays sizeable in terms of number of people (12) but not in terms of total PY (3.85). The balance between social and biophysical sciences has improved in the team. Furthermore, many of the members have in their own education or experience a good mix of social, physical or biological sciences. Several team members are located in Ottawa and at least one member is found in each of the four regional offices in AME.

7 REFERENCES

Bryant, E. 1994. Water: tapping Africa's most basic resource. *African Farmer* 12 (July), 25-28.

FAO. 1996. Evaluation of Food Security. World Food Summit Technical Paper WFS 96/TECH/7.

Gow, D. 1989. Development of fragile lands - an integrated approach reconsidered. *in Fragile lands of Latin America: strategies for sustainable development. ed.* John O. Browder, West View Press, Boulder, Colorado.

Lal, R. 1995. Erosion-crop productivity relationships for soils of Africa. *American Journal of Soil Science Society* 59:661-667

Olderman, L.R., R.T.A. Hakkerling and W.G. Sombroek 1991. *World Map of the Status of Human-Induced Soil Degradation: An Exploratory Note.* ISRC-UNEP Report, Netherlands.

Rached, E., E.M. Rathgeber and D. Brooks (Editors). 1996. *Water management in Africa and the Middle East; Challenges and Opportunities.* International Development Research Centre, Ottawa, 294 p.

Scherr, S.J., L.A. Jackson and S. Templeton, 1995. Crafting land use policies for the tropical hillsides in 2020. *In* Implications for Food, Agriculture and the Environment to 2020. *IFPRI, Food, Agriculture and the Environment, discussion Paper* 14.

Scherr S.J. and S. Yadav 1996. Land degradation in the developing world. *In* Implications for Food, Agriculture and the Environment to 2020. *IFPRI, Food, Agriculture and the Environment, discussion Paper* 14.

Templeton S.R and S.J. Scherr 1997. Population pressure and the microeconomy of land management in Hills and Mountains of developing countries. *IFPRI, Environment and Production Technology Division, Discussion paper* 26.

UNDP 1997. *Human Development Report 1997.* Oxford University Press 1997.

World Bank-FAO, 1997. Recapitalization of soil productivity in Sub-Saharan Africa; Discussion paper. Presented at the "International Workshop on Development of National Strategies for Soil Fertility Recapitalization in Sub-Saharan Africa", Lomé, Togo, April 22-25, 1997.

World Resources Institute, 1992. *World resources report, 1992-1993.* Oxford University Press, New York, NY.

ANNEX A: PROJECT REVIEW AND APPROVAL PROCEDURES

Individual team members of PLaW are authorized to identify and develop projects, especially within their areas of geographic and disciplinary experience.

a) Once a potential recipient has submitted an adequate pre-proposal, the sponsoring team member can discuss the proposal informally with team members. Once the PO has made his/her mind that the proposal is valuable for the PLaW pipeline, s/he submits the material and her/his initial comments and recommendations to the whole team through the team leader. Ideally this should take the form of a Project Identification Memorandum (PIM) to be distributed within the team and other colleagues as seen fit. This includes a written summary of background to the project and its fitting with previous PI decisions on work plan priorities, and with the PI objectives and other expectations detailed in this prospectus. In the PIM, the sponsoring PO can also suggest the names of one or two reviewers who can also act as sub-team for purposes of the proposed project, and flag any element of the proposal which requires special attention or expertise in its review. In practice thus far, most pipeline entries have not gone through the PIM route. They have been discussed during PI team meetings where each PO present his/her proposals for discussion by the team as entries in the pipeline.

b) After the proposal has been entered in the pipeline, the team leader assigns it to at least two reviewers, and advises the whole team. The pipeline and the list of reviewers is maintained by the Research Officer.

c) The review team members exchange comments and provided the project fits the PI may suggest adjustments to the proposal or request specific clarifications or additions. The sponsoring PO will integrate and summarize the comments received from the review team and others, and will ensure that proponents specifically address those concerns and critical comments. If a revised proposal is not necessary, as agreed by the reviewers, responses can be provided in separate pages that will be appended to the original proposal when preparing the Project Summary. If there is any doubt about the ability of the proponents to overcome deficiencies identified in the review, the proponents should be notified of ongoing concerns uncovered in IDRC's review. Furthermore, the team, if it so decides, can recommend ways to reinforce the proposal or the research team, or even to postpone or abandon the project.

d) After all comments have been addressed and on recommendation from the reviewers to the team leader and the sponsoring PO, the PITL authorizes the Project Summary development.

e) At this point, the original review team, with any required change or reinforcement sanctioned by the PITL, becomes the team responsible to lead and monitor the Project Summary development.

f) This Project Summary development team continues interacting with the proposers, develops and reviews the appraisal and is authorized to carry the proposal through final approval and funding, provided that it is within their signing authority and funds are available. If the project exceeds the responsible PO signing authority, it is passed on, as appropriate, to the Program Team Leader, Regional Director, Research Manager or Vice

President. The PS documentation must contain documentation of each reviewer “green light” for project final approval.

g) Any team member can access any project in the pipeline and participate or comment on its Project Summary development at any time he/she wishes. Reviewers can also consult more widely within and outside the team.

Following Centre guidelines, the team will ensure that 50 percent of the PI funds are committed or appropriated by September of the fiscal year and 80 percent by December.

ANNEX B: UPDATED WORK PLAN 2000-2003

Year 2000/2001 plans

1. **Prompt implementation of the pipeline.** This is a drastically adjusted pipeline and includes activities for the year 2000/2001 only. Given the PI's outstanding commitments with partners, **this pipeline will exhaust the PI budget allocation for 2000/2001** as a year of transition. The pipeline includes key activities such as an assessment of the present array of efforts and actors, including donors, that are focussing research and development on water security for communities in the Middle East and North Africa. The team realizes that this area of PI-focus is more active now than it was three years ago and finds it necessary to reassess its position, especially regarding RX efforts. Another key activity is a small-research-grants project for "gender-aware research in agricultural and natural resource management" for Eastern and Southern Africa. This activity, which is targeting a sizable constituency at field level, is to reinforce the PI efforts to mainstream gender in research but also to promote the utilization of gender disaggregated research results and information in decision making by research bodies and policy makers.

2. **Pipeline discussion for years 2002 and 2003.** This is a whole team activity that will start with a "virtual" meeting using electronic and telephone communications during May 2000.

3. **Start up of PI working groups plans and activities.** The team formed several groups with specific assignments that go beyond normal project development, monitoring and final reporting. There is a good opportunity for this now that funding is limited and not all POs can have an opportunity to develop projects of significance for the PI all the time. The PI will consider that participation and delivery as part of these working groups (WG) is at least as important for PO performance appraisals as project development. This year WG's responsibilities include the development of more detailed work plans (including budget requirements for the pipeline and output delivery), and the start up of activities. Working groups include the following:
   a. **Resource expansion,** which is an area in which the team would like to expand its success in parallel-funding into co-funding. In developing this WG and its initial plans, the PI counted on the support of PBDO and is grateful such support will be maintained.
   b. **"Closing the loop".** The assignment is to review PI and related work done on key areas of focus, to extract lessons and assess the value of results being obtained, for documentation and management decision purposes. Areas selected: conflict-management, water security, and gender.
   c. **Inter-PI collaboration**. There are plenty of opportunities for inter-PI collaboration and different people will lead such interactions. Some of the areas with room for collaboration are identified below as part of the changes proposed for the prospectus.
   d. **Special Initiatives.** These groups already existed in the PI. The special initiatives are four: Water Demand Management, Water Hyacinth Information Partnership, Communication for Improved Soil Productivity Management by Communities, Local Management of Natural Resources. Previously these groups reported to the team each year or when important events occurred. From now on they will report at least twice per year and they will reinforce their attention to RX.

4. **OSSREA training workshop** on social analysis for NRM researchers. This important event is planned for August-September 2000.

5. **RX-cofunding options assessment**. To start, with the collaboration of PBDO, a study to identify and understand better the co-funding opportunities available for the PI. Since this issue is important to other MNR-PIs, we will promote this as an inter-PI effort. Funding for this activity will be possible from 2001 only.

6. **PI evaluation**. To start, with the support of the Evaluation Unit, planning and preliminary activities to implement the PI Evaluation Plans. This will include a better definition of anticipated activities, terms of references for participants, outputs and responsible parties from within and from outside the team, for implementation starting in 2001. Funding will be allocated in the year 2001. This will also include close monitoring of project 98-0806 (African Highlands Initiative Performance Assessment) funded and managed by the Evaluation Unit of IDRC with a focus on PI project 98-8548 African Highlands Resource Management in East and Southern Africa. Furthermore, the African Highlands Ecoregional Program, which these two projects support, will be evaluated during 2000 by the coalition of donors. The program is an important part in the portfolio of the Association for Strengthening Agricultural Research in East and Central Africa (ASARECA) which is a coalition of national agricultural and natural resource research groups in the region. The results from this evaluation will be available to MNR-PLaW.

Year 2001-2002 plans

More precise plans will evolve during the year 2000/2001. In terms of budget, the PI will adjust to what is available from IDRC, estimated at about CAD 2.8 million, and RX options to be developed. A more precise allocation of budget will be developed during pipeline discussions anticipated to start in May 2000. Focal areas and activities anticipated for implementation or start up during the year include:

1. Implementation of the pipeline developed and discussed during 2000/2001
2. Conclude and act on the results of the **RX-cofunding options assessment** started in 2000-2001
3. RX efforts with a focus on the Water Demand Management Research Network (WDMRN) project and new areas identified in 2
4. Special initiatives, review of progress and planning of further activities and reports on results
5. Implementation of plans and reporting by working groups
6. Start up field work of PI evaluation plans
7. Conclude and act on the results of the study/assessment of the present array of efforts and actors, including donors, that are focussing research and development on water security for communities, especially in the Middle East and North Africa
8. Team meeting and assessment of working groups and overall PI progress and delivery

Year 2002-2003 plans

More precise plans will evolve during 2000 and 2001. In terms of budget, the PI will adjust to what is available for IDRC, estimated at about CAD 2.9 million, and RX options to be developed. A more precise allocation of budget will be developed during pipeline discussions. Focal areas and activities anticipated for implementation or start up during the year include:

1. Implement pipeline developed and discussed during 2000/2002
2. Conclude and report on the results of the PI evaluation exercise
3. RX efforts with a focus on the WDMRN project and new areas started on in 2001
4. Special initiatives, review of progress and planning of further activities and reports on results
5. Work implementation and reporting by working groups with a focus on lessons learned.

6. Prepare PI documents resulting from key PI activities with partners and from WG for distributions to key audiences and users
7. Team meeting and assessment of working groups and overall PI progress and delivery

ANNEX C: MNR-PLaW EVALUATION PLAN: 2000 - 2003

EVALUATION ISSUES	WHO WILL USE EVALUATION, HOW, & WHEN?	QUESTIONS TO BE ANSWERED	WHO WILL CONDUCT & MANAGE THE EVALUATION?	DATE (START & FINISH)	COST
PI objectives Value of PI objectives re current environment of priorities and support to development	IDRC and Team to assess value and form of continued support to PI work Partners, to assess their association and partnership with the PI	Are the PI propositions and project results of value today, i.e., is there still a clear need for the PI work and a niche for valuable PI contributions individually and in partnerships?	The PI team decided that all evaluations will be done by the team with external expert assistance. Specific timing to be discussed with the EU.	Mid 2001 to mid 2002	CAD 40,000
PI Critical dimensions 1. Conflict management	This PI and other MNR PIs, for review of their PI activities design and approaches. Partners with interest in the subject matter.	Are researchers supported by the PI explicitly addressing conflict issues as part of their work? Has there been progress in their ability to do so? What have been the main limitation faced by researchers to address issues of conflicts and their management in NRM?	Team with external expert assistance	Mid 2001 to mid 2002	CAD 20,000
EVALUATION ISSUES	WHO WILL USE EVALUATION, HOW, & WHEN?	QUESTIONS TO BE ANSWERED	WHO WILL CONDUCT & MANAGE THE EVALUATION?	DATE (START & FINISH)	COST

2. Sustainability and Equity issues	Team and partners, in assessing evolution or need for adjustments in their agendas and approaches	Are these issues being explicitly addressed as part of PI supported or influenced activities among partners? Are approaches, activity implementation and results consistent with the above?	Team with external expert assistance.	Mid 2001 to mid 2002	CAD 20,000
3. Soil productivity awareness and management at community level	Team, partners and agents working at community level, in assessing options for improving community management of soil productivity.	Are the PI efforts, fostering attention to communication within targeted communities, improving options for communities to access relevant information and support to improve management of their soils?	Team with external expert assistance.	Mid 2001 to mid 2002	CAD 20,000
4. Community participation, multidisciplinarity and explicit attention to gender in R&D work	Team, partners and agents working at community level or for impact at community level, in assessing options for improved research work and application of results in NRM and community development work.	Are the PI efforts, fostering such methodological tools in R&D, improving community options to participate, obtain better information and take control of research and development efforts that target them? Are other agents learning and internalizing these lessons in their work?	Team with external expert assistance. Note. Part of this is being done in relation to activity 98-8548 (African Highlands Resource Management) in project 98-0806 (AHI Performance Assessment) funded and managed by the Evaluation Unit.	Mid 2001 to mid 2002	CAD 30,000
EVALUATION ISSUES	**WHO WILL USE EVALUATION, HOW, & WHEN?**	**QUESTIONS TO BE ANSWERED**	**WHO WILL CONDUCT & MANAGE THE EVALUATION?**	**DATE (START & FINISH)**	**COST**

5. PI Water Demand Management focus, re current environment of priorities and support for research and development on water security.	IDRC and Team to assess value and form of continued support to this PI focus area Partners, to assess their association and partnership with the PI on the issue	Are the PI propositions and project results in this area of value today, i.e., is there still a clear need for this PI work and a niche for valuable PI contributions individually and in partnerships?	Team and external expert assistance in collaboration with PBDO and EU.	2000/2001	CAD 50,000 part of activity in pipeline
PI operational issues	Team and IDRC management.	What have been the main difficulties and facilitating elements for the PI team formation, its work and effectiveness? What can be recommended?	Team with external expert assistance.	Mid 2001 to mid 2002	CAD 30,000

ANNEX D: PLaW TEAM MEMBERS.

Name, Academic Degree	Education / Expertise / Experience	%Time allocated to NRM-PLaW	Position & Location
Dina Craissati, PhD	- political sociology, social development, movements of social and democratic change, democratic governance, policy influence - community organization, NGO action, adult education - contemporary gender and development discourse in the Arab region	30	PO/MERO
Guy Bessette, PhD	- education technology, dev. communication; participatory research for dev. communication - information communication technologies, application to rural planning and development - networking of NGOs and CBOs for discussion and joint action in natural resources management	40	SPE, Ottawa
David Brooks, PhD	- natural resource economist; water resource management - energy, water conservation, environmental and natural resource policy, linkages between environment and sustainable development	20	Acting DPA, Ottawa
Innocent Butare, PhD	- Degree in agriculture (Ingénieur Agronome); MSc and PhD in experimental and applied ecology - Food security, environmental policy, rural agricultural development, policy and sustainable dev. - Agricultural research and extension project management - Senior university lecturer in agriculture and ecology	60	SPO, WARO
Jean Lebel, PhD	-Environmental health, occupational health and occupational hygiene	20	SPS, Ottawa
Wardie Leppan, M.Eng, MA	- Mechanical Engineering, Civil Engineering, Development Studies, Completed course work and comprehensive exams for PhD in Political Science - Food security, CBNRM, political economy of NRM, sustainable dev., participatory action research - Project Advisor, Energy Research Group; CIDA WID Consultant; International Centre for Ocean Development; Executive Director, Canadian food security coalition, World Food Day Association	10	SPS, ROSA
Luis Navarro, PhD (Team Leader)	-degrees in Agriculture, Ag and Marketing Economics, PhD in Ag and Resources Economics - FSR and food security, ag marketing, ag and resources economics, ag policy, computer programming and simulation - senior ag economist CATIE, Prof U of Costa Rica, FSR and dev., Central America and Caribbean - Associate professor Oregon State University - Sri Lanka - USAID, GOSL project team. - 8 years with IDRC in Eastern and Southern Africa	80	SPE, EARO

Name, Academic Degree	Education / Expertise / Experience	%Time allocated to NRM-PLaW	Position & Location
Calvin Nhira, PhD	- Applied social sciences	40	SPO/ROSA
Don Peden, PhD, P.Ag.	Ph.D. in Range Science and Systems Ecology with expertise in: Agroforestry, Animal Science, Ecosystems research, Wildlife research, GIS, Land-use mapping, remote sensing, crop inventories, on-farm participatory research with women's groups.	10	SPE, Ottawa
Eglal Rached, PhD	- Ph. D. in Soil Science; - agriculture specialist; dryland resource management, esp. Integrated land and water management - rainfed agriculture and pastoral systems, indigenous knowledge and technologies; land tenure systems and communal management of common resources. - dev. planning tools for the management of land and water resources; gender and dev. - 10 years with IDRC in the Middle East and North Africa	10	CS, RD (MERO)
Eva Rathgeber, PhD	- Ph.D State University of New York, Comparative Education. - social sciences and analysis; science, technology and energy policy; social and gender analysis; project/program development, management and evaluation. - worked in Africa since the 70's: Nigeria; Zimbabwe; and East Africa - work in IDRC, 82-87 SSD, 87-92 as Coordinator, Gender and Development Unit; 92 present as RD in EARO and CRD for AME.	15	RD (EARO)
Ola Smith, PhD	Professor of Animal Production and Health, with expertise in: Food Security issues, animal production and health, land degradation and desertification nutrient cycling within the soil-plant-animal continuum, and community management of natural resources.	50	SPE, Ottawa

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June 12, 2000
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